26TH September 2022
Resident
Guyra

Re Renewables and Intensive Agriculture Future

I Oppose this Future of Harm And Loss Global Control Agenda called Australian Government, UNE, ARC, and Ignorant Councillors who are Unaware how Vital This Upper Tributary Catchment area is to the Entire Eastern Seaboard of the western eastern northern southern regions of the top half of NSW.

Harm and Loss are Both Ideas that are supported by government and not Farmers fighting Renewables on Their Country, government isn't hearing. Of course. Government have not heard the People since 1983. Correct. We are facing a Global Catastrophic Future under Globalists in the Northern Hemisphere, forcing Ideas into Australian Debt Ridden Government.

Cease and Desist please government being all here in local council Global Agenda world.

I research Human Impact to Vital Upper Tributary Catchments and Vital Upland Wetlands of the Northern Tablelands Lands around Guyra, Ben Lomond, Black Mountain, Invergowrie and Ebor.

Harm and Loss is white Land Managemant. Worsening. Worsening. It's a Profit Business MindSet ruling this Land called Sacred. It is Sacred. A Worsening is coming. Its here now. Its Renewables as Farms. Livestock as chemical products.

Cease and Desist this way. Today. From Now. Go Magnet Power Plus Holistic Regenerative Agriculture. Add Mulloon Institute for a Better Care Future to Catchments government has no care for.

Wake Up government, Local government, UNE, and Councillors in Armidale City Council. Where this project is focused. On council in Armidale.

I need our region of Vital Upper Tributary Catchments Separate from a council entirely controlled by State government plus Federal government, plus UNE Global Agenda humans.

I Object to the document written by Constructive Energy Pty Ltd. When was it written. When. Pre Worst Ever Dry Drought Ever In History of this high altitude area government know Nothing about.

I Object outright to this document and to the council Unable to Understand Catchments.

This area is Under Threat from Renewables Plus Intensive Agriculture plus Costa Group and the increase in population Agenda offered by a City council. A City council. And

those working on a Agenda I say will be Responsible for the next Dry Drought 3 years after Metz Uralla Plus another Solar Farm in the Cool Climate region called Cool Climate for a Reason. The Reason is this.

Cool Air comes from high altitude mountain areas. Hot air hits it from the East or West Flow Air Currents. Hotter Air will be the Future in this region if the Renewable Ideas can get approval. Can. Hope Not.

Understand Catchments please government. You are Threatening our Original Species you see. White Land Management is Worsening and may get Far Worse under Armidale Regional Council and a quite Unaware UNE group of who. Investment entities, Yes. Geet Out of this region you lot. All of you. Council please Support the Separation of our region from Armidale City Humans All please. Meaning. In the Worst Ever Dry Drought in History Armidale Regional Council gave Rights to Costa Group and Urban Residents and Businesses. How Dare you ARC. How Dare You ARC.

I Object to the Entire document written by the hidden focus on Money Profit Infrastructure Lie created by Foreign Investment entities in Control of our Lands named Australia.

I Object to ARC outright. Cease and Desist your incapable Land Management of this Vital Upper Tributary Catchments region.

I Object Outright to this Agenda named Global Profit Harm And Loss Agenda without Care for Country care. Bring in the Mobs Immediately please.

Care for Country Please government. How.

Magnet Power Immediately.

Mulloon Institute.

Holistic Regenerative Land Management.

And 87,568,874,748,878,891,827,184,278 Trees. Theres your Jobs . For Locals. For the Next 57 Years. Yes. That will Assist the Weather you see. A C word will Harm the Future. Cease using it. Embrace Groundcover. Embrace Mulloon Institute in the Water Holding ways it can Care for Country. Plus Magnet Power Future Free Energy Future From the day Government Capture the Criminals Killing Magnet Power creators. How dare you Big Dollar. How Dare you UNE. How Dare you ARC. Blind to Global Control Harm and Loss Agenda.

There Isnt a Future with renewables on Country Anywhere ON Earth. Proven. View China and Yangste River Harm and Loss to Catchments in Asia. China understand Renewables wont power the future. Theyre going to coal.

Whose. Australia's. Under which government. Australian. In Debt. Yet Unable to offer the Mobs Their Country. Yet able to Offer Foreign Investment Entry Onto Country Not theirs To Harm.

Please Cease and Desist this Idea. Government Cannot offer a Future you see. I See it all you see. I Understand Catchments in a area of high altitude, under Threat from white corporate Profit Harm And Loss Global Northern Hemisphere Takeover Rule Agenda , Without Any Care for Country. Why don't you know this , People. Because you want money. Because you spend it Badly. Get Out of our Vital Upper Tributary Catchments.

I Object Outright to this Document written by Constructive Energy Pty Ltd. Dear oh Dear. When will EIS research begin on Renewables. It has. Yes it has. Europe is burning. Blame what.

Global Agenda for Profit over Loss to Life on Earth. Proven in Europe. In Asia. In Iceland. In England. Its Current Land Management. It Is. Watch the England next summer , people. Watch a continent named Australia alter Aquifer ability Yet Again. I don't want your Hideous Unwell Unkind Future. I Need Care for Country Future.

Go Magnets. Free Energy. Who wouldn't want that. Companies Of course.

Go Regenerative Heart Your Farm Agriculture. Already offering Wonderful Care for Country.

Go Planting a million trees for the rest of your life , People. And watch This Land Enliven our Original Species. Harmed by White Land Management for only 172 years ! Eons of Time created the current Species here now. No. how many Original Species are here now. 14 %. That's all. Hope that Really makes you Reconsider your Inappropriate Ideas government will force upon us Unless we Keep Fighting Against them all.

Go Future without government. Go Mobs. Care for Country Is The Future. It Is.

Cease and Desist, ARC, UNE, plus the unaware Councillors I Cannot bear listening to. The mayor. Step down Today please mayor. You support that Global Harm and Loss World Agenda. Yes you do . Yes you Do. I don't want that Future. Get Out of our area please. Please. Get Out. You too UNE. You too ARC. You too councillors following the leader. That's All of you. Yes it is. None of you Care for Country. Not one of you. Not one. I know that.

Go Magnets. I Will.

Support Regenerative Soil Loving Groundcover Holding Agriculture. It Is the Future.

As is Care for Country. Time you learned how. All of you. Every one of you. Time you learned Care for Country. Time you Did.

Its Easy when you Love Trees. The Eucalypt Is My Teacher. They Teach me Care for Country. A wetland named Mother of Ducks Lagoon Teaches me about How Vital The Wetlands Are to the Future being Today. Forever from Today.

Cease and Desist The Harm and Loss Ways. Offer Care for Country Future Government.

Offer our Catchments Mulloon Institute Care for Country. They Learn from Mobs about How To Care for Country by Caring for Catchments you will Harm.

If I suggest one thing. Then its this one.

Cease and Desist Science. Immediately. Its caused Mass Extinction. It Cannot Continue. Must Not Continue. Get Out and Walk Country with Elders, you lot. Cease and Desist Science. It causes Harm And Loss. Proven Worldwide. Proven worldwide. Its Time For Care for Country Love Toward All Life.

Magnet is the Power Earth needs. She Powers Herself with it. Don't you know that. She Shows us Everything we need to Be Well. To Care for Her and Her Life Forms we have No Right to destroy or harm or Lose. Gone are 84 % of the Original Species , present 174 years ago. Its white Land Management that has no concept of what Life Is.

Life is Supported by Water you see. Science doesn't now that. Cease it ruling this Continent called the Driest Continent on Earth. Because the Eon Evolved Life Forms Cannot survive White Land Management. And That's the Impact Worldwide we see. Worsening under the Profit Global Agenda Hideous ones far too Unwell to Care for Country. They include UNE people. ARC Staff. ARC management. Councillors. Please Get Out of this Land Named Earth. Now. You Cannot offer this Vital region More Harm And Loss. More.

Life on Earth is Dependent on Clouds. On Clouds. And what do Clouds offer Dear Earth. Think about it. And then think of this. What is Heating the Surface of Earth. Once you Understand these two concepts, you will stop supporting the Harm And Loss government Agenda. Love Clouds From Now. Love A Planet watered by Clouds. Honour this Cool Climate region so Tiny when you observe that western region of Catchments dependent on Clouds and a Cool Climate region, under Threat from Now Current Time Into 48 years from now If this Idea gets going on Country Never Your to Rule or Harm or Create Loss upon.

Trees as Forests this Land Needs More than Any other plan.

Plant Trees Forever , Aussies. Regenerate Catchments Aussies. Use Magnet Technology, Aussies. And please do not support 5G 4G Harm and Loss To Life on Earth Agenda. 5G is Impacting Weather. Yes it is. Don't you know that. You should. I do. How. Its Easy. Earth Says, I Feel a Difference on Me. Over Me. Upon Me. Over me. Remove it. Now. 5G Is Harming Life on Earth. Add a Worse Land Management upon the Land named Cool Climate. Under Threat from A Heating Plan making money for companies. Foreign companies. Noone else. Why don't you know that. Why don't you. Why don't you. Well that s easy. You're employed by government. You are. All of you. You believe Anything.

Cease and Desist this Plan called Renewable Intensive Agriculture plan. It Will Harm Cool Climate Catchments and Therefore Life upon them. A Dry Drought Taught me More than anything that Forests Care for Country. Forests. Eucalypts. The Survivors of 173 years of white land Management. Let us Walk a Very Different Future and Use Nature Intelligence to Guide us through to 184 years from now. That's 7th Generational Future the Indigenous Understand. We have to Get Connected to Country, Humanity. WE Have To. Have to. From Now. All of us. Money Isnt the way to treat a Planet, that Loses every day a Species not human. Not human.

I Object to the Ideas offered in a government document written by a energy company. C'mon. Its Obvious you Have No Consideration to Catchments and The Species called Original that have Survived til now.

The Koala will Face Extinction and I Cannot allow that. Cease and Desist government. Now. Right Now.

Cease and Desist Science. Its Proven to Limit Biodiversity. Proven. I don't need a Worsening Future. I need a Care for Country Future.

I Need Care for Country Future. I Object to this report ARC, UNE and Councillors support. Why aren't you offering Regeneration Future. Because you Arent.

Why.

Because you do Not know anything about Catchments. A Dry Continent. A Rain – Fed Continent. A Dry Drought Continent now. It is. If it doesn't rain on country in this region for 8 weeks, it Harms what. You don't know do you. Catchments. That serve a Massive area. Massive. An area you don't realise includes the Aquifers we Drain Away every day without any thought about it. When will we become Intelligent. Its Easy. Walk Country. In Awareness Please. In Reverance Please.

Care for Country Future Please government. It’ll Pay Back Debt yes it will. It will.
Renewables Will Cost Us. Who. The People who Have No Say.

Sustainable Living Armidale, P.O. Box 85, Armidale NSW 2350

25 September 2021
General Manager and all Councillors
Armidale Regional Council
Rusden Street,
Armidale NSW 2350

Re: Submission to Armidale Regional Council's draft Renewable Energy Action Plan (REAP).

Sustainable Living Armidale (SLA) commends Council for its preparation of the draft Renewable Energy Action Plan and strongly endorses adoption of this plan by Council.

SLA strongly supports the purpose of the REAP: "to provide strategic direction into the specific opportunities and pathways for Council in becoming 100% renewable by 2030 and to support the entire region in achieving the same". It may be more accurate to reword this sentence and replace the words "*in becoming 100% renewable"* with "*to transition to 100% renewable energy sources"* .

Of particular note in the **Executive Summary** are:

- Council's overarching objective to drive operations to 100% renewable energy by 2030
- Identification of solar PV electricity generation as the most obvious opportunity (the cheapest and most efficient form of renewable energy generation, with no transmission losses)
- The advantage of putting in place further energy efficiency measures to reduce the CAPEX required to reach 100% renewable.

  Note, please, that the document needs to show what the acronym CAPEX (?capital expenditure) stands for.
- The conclusion that becoming 100% renewable is not only achievable but also makes economic sense and will improve the fitness of Council for the future on multiple levels.

Section 2.0

REAP builds further on community call for Council action and existing documentation

It is heartening to see that the REAP provides clear options for Council to choose in responding to the strong community call for effective action to minimise the contribution of our region to greenhouse gas emissions and resultant global warming. In doing so, the plan provides a pathway for implementing steps identified in the *2020 Framework for Climate Action* document prepared by the Climate Emergency Working Group of Council's Environmental Sustainability Advisory Committee as well as relevant government documents such as the *NSW Government (Adapt NSW) Western Enabling Regional Adaptation New England North West Region Report*.

The REAP follows on from Council's established operational target of zero emissions by 2030 through completion of a desktop audit of Council's energy use and by identifying Emissions Reduction Pathways.

Leadership approach

The emphasis in item 1.4 on benefit to the wider community and on leadership to stimulate positive change in others, is strongly supported as well as other considerations: contribution to Project Zero 30, positive financial impact and the identified elements of logic. SLA applauds a 'leadership by example' approach that not only enables Council to '*become an investor and long term financial beneficiary of energy infrastructure in the process of transitioning to 100% renewable energy*' but which also supports the community to come along on the journey (p 11). It would be appropriate to include reference to the community as part of the quote in italics above. The role of Council in demonstrating ways for the community to engage with this transition in a positive way should not be underestimated. Demonstration of measures which inspire community members to take responsibility for our their energy use and improve energy efficiency are an important part of the mix. If we, as a region as well as state wide, are efficient in our energy use and do not leave all of our energy generation up to large scale projects, then overall less large scale projects will be needed.

ARC Renewable Energy leader- priority inclusion within "Restore and Thrive".

SLA recommends prioritization of ARC Renewable Energy transition as a key component of the "Restore and Thrive" narrative associated with the ARC Community Plan and the call for a Special Rate Variation. This could be reflected within the REAP document with a statement that makes this prioritisation clear going forward in the wider "Restore and Thrive" framework.

Following on from this, it would be appropriate to include in the REAP a statement prioritising advocacy to the State government for support funds to enable ARC to develop as a leading renewable energy provider, in partnership with community, community organisation and business where appropriate, as has been described and supported in various ways in this submission. This prioritisation would be consistent with and stand beside the prioritisation of water security and funding for Malpas Dam wall expansion (for example) in the current "Restore and Thrive" narrative, with funding already sourced and committed by the NSW State Government.

Engaging the Community and Business

Following, from the above an additional section specifically identifying Council actions to expand community and business engagement in the transition to renewable energy sources is needed. The REAP document touches on this in various places for example, in the recommendations (see action for recommendation 14 on page 55: "Continue community engagement through Project Zero30") and the reference to "Community benefit – how does the wider community benefit from this project?" in the Roadmap, 7.1 page. 52. However, a specific section highlighting community and business engagement and benefit would improve the document. The City of Darebin has a good example of how this can be done in its Darebin Climate Emergency Plan 2017-2022, section 6.8 - see DarebinClimateEmergencyPlan20172022pdf.ashx.

Section 4.1

Council Energy Efficiency

SLA strongly supports Energy Efficiency Measures listed on page 20-21 of the document and previous and ongoing effective action by Council to increase its efficiency in energy usage. Recommendation 18 on page 56 makes reference to retrofitting strategies to improve energy efficiency. Use of recycled content materials where possible in Council projects also has the potential to reduce embedded energy in the built environment.

Analysis of Council's energy use in the REAP highlights street lighting as requiring the biggest energy use hence the need to prioritise 'continuing to work towards replacing inefficient street lights with energy efficient alternatives'. Identifying the best option to power street lights with renewable energy should also be a priority.

Targeted installation of Smart Meters / load control

The recommendation on page 20 re investment in the roll- out of meters with monitoring and control capacity across all assets makes good sense.

Section 4.3

Production of Renewable Energy / Promotion of its role as a renewable energy producer.

The REAP analysis shows that Council's own facilities can produce a substantial portion of their own electricity by installing solar photovoltaic panels (PVs). SLA strongly supports options that value self-generation, matched to self-consumption, with the opportunity to obtain energy at negligible cost once the array is paid off. It is evident that Council is already benefiting in this way from previously installed PV arrays (p 27).

SLA would like to take this opportunity to acknowledge and commend Council's completion of the installation of solar panels at Monckton Aquatic Centre, which was budgeted for in 2020 as an initial action following with Council's 2019 Climate Emergency Declaration. We note the annual cost to Council of $20,294 for energy consumption at this community facility. The cost of the PV installation, in the vicinity of $47,000, is likely to be recovered by Council in a short time period with subsequent free energy costs. It is noted that this installation was not included in the REAP. It would be interesting for the community to view cost recovery arising from the various solar PVs already installed by Council. It would assist with community engagement if Council publicised these achievements.

Behind the meter solar energy generation won't be sufficient for Council to meet all its energy needs, so options are given in the REAP for meeting the remainder of Council's energy requirements. The document identifies that, in addition to meeting its own energy needs, 2,388,240kWh is required for Council to virtually offset Council energy use (p30). It highlights the strategic choice to be made between implementing distributed BtM solar and mid-scale Solar project.

SLA encourages Council to choose options that meet its energy needs or are additional to its own energy needs in a way that engages with and offers some benefits to the community. This would enable Council to demonstrate leadership in stimulating positive change in others as well as playing an enabling role to broaden out the positive impacts of their renewable energy strategy.

To this end, development by Council of a decision-making criteria around pursuing options that also involve, enable and benefit the broader community would be beneficial. Different options would call on lesser or greater degrees of community effort and involvement.

Section 4.3.1 Mid-scale solar power plant

A number of different options are identified ranging from co-ownership to hybrid systems, potentially in conjunction with local rooftop solar PV installations. If Council chooses this option, it would be good to do so in partnership with the community and enable a community owned element. This would enhance community engagement and education. Potential co-benefits could include access to finance, although it is likely that Council will be able to access cheap loans through the state government. The opportunity for a mid-scale solar installation adjacent to the sewerage Treatment Plant has been flagged for a number of years due to a number of factors and would be supported by SLA.

Section 4.3.2 Distributed solar installations

Virtual power plant

The option of a virtual power plant could enable Council to purchase renewable energy from residents and businesses in the community who already have solar PV installations and/or batteries. Participating households could, at an agreed price, sell excess solar energy produced during the day (or stored in batteries) during the peak period when energy is needed by Council.

This option would have wide community benefits, enabling anyone with solar and or / batteries already installed to participate in the program and to buy and sell from each other. There are existing models for such projects which are complex and ambitious but have been done before and have the potential to be highly beneficial. The alignment of this collective approach with the objectives of Project Zero30 is also positive.

Rent to buy model

In this model the system is initially funded and owned by someone else but is ultimately paid off and owned by the host site. This model has been implemented for community energy projects in many instances. For example, the Repower Shoalhaven Group (Wollongong area and south) has initiated a number of projects where the community funded the initial solar PV installation which the host site then rented, benefiting from use of renewable energy and eventually proceeding to full ownership. See https://www.repower.net.au/ and https://www.repower.net.au/project/solar-farm/ for more details, some of which are included in italics in the following paragraphs.

Repower Shoalhaven is a community based, not-for-profit social enterprise with over 7 years of developing community based solutions and a strong track record in enabling businesses and other organisations to adopt solar power.

Our mission is to facilitate the development and implementation of renewable energy to deliver positive outcomes for local communities on the South Coast and SE of NSW. This includes reducing carbon emissions, creating sustainable jobs, keeping money in the local economy through savings created by lower power bills and by investment in solar and other clean energy facilities.

Repower Shoalhaven's eighth, and largest, investment offering Shoalhaven Solar Farm Pty Ltd is a community / private partnership comprising a 3MWac solar farm (8,000 panels), part-funded by community investors, with electricity offered to local businesses via power purchase agreements through Flow Power.

The solar farm location is on Nowra Hill Road, off BTU Road, on land leased from Shoalhaven City Council for 30 years. Capital cost is approximately $5 million.

The benefit of this approach is that it builds relationship and partnership with the local community and enables community investors to receive a return on their investment. By following this example, Council can broaden its engagement around renewable energy rather than simply making energy transition an internal Council issue that the community doesn't see or hear about.

We note that, although this is a desirable opportunity, it would require a community entity to lead and be involved. SLA is open to further consultation regarding how this might be facilitated - UNE SRI might also be interested in facilitating this type of innovative start up in our region.

Section 4.7 Electric vehicles (EVs) and charging stations

SLA strongly supports transition of Council's fleet from fossil fuel energy source to a renewable energy base.

There is also potential for bulk purchase of electric vehicles to facilitate community uptake.

Installation of additional EV charging stations could potentially be paired with community information sessions around electric vehicles. Positioning of additional charging stations in locations where they can also benefit the community will amplify positive impacts. The EV charging station at the information centre is well located in this regard.

Section 5.2.2 Large scale wind energy installation (turbines in the range of 1 megawatt plus)

If Council was to pursue its own wind farm there could be an opportunity for the project to be half owned by the community. Such a project has potential for really positive outcomes by building on the community interest that was evident when the community initiative, New England Wind, was advocating for a community owned wind farm in our region (see https://starfish-initiatives.org/sustainability-initiatives/new-england-wind/).

A number of Armidale residents have already benefited from a 2010 pioneering community investment scheme set up as part of the Sapphire Wind Farm project at Glen Innes. Information about this initiative can be found at https://cwprenewables.com/assets/main/PDFs/Bango/Minutes/Sapphire-Wind-Farm-Community-Co-Investment-Fund-booklet.pdf. To quote from the booklet: *Grassroots Trust seeks to share the financial benefits of its projects with the communities which live locally to those projects. It has therefore pioneered a community investment scheme which it seeks to implement in all of its projects, commencing at the Sapphire Wind Farm. This approach is common in Europe but is new to Australia for projects of this scale.*

Section 5.4 Bioenergy generation

The productive utilisation of greenhouse gases emitted by sewage or landfill to produce heat or electricity makes good sense as does conversion of the more potent greenhouse gas (methane) to a less potent form (CO2).

Multiple different feed sources and different kinds of energy inputs can be used to produce bioenergy. If this option is chosen Council should seek environmentally sustainable sources and avoid unsustainable avenues such as utilisation of native forest waste which fuels native forest logging.

Latrobe City Council in Gippsland has just installed a bioenergy unit at their landfill site which has the potential to provide ARC with a precedent and example of an excellent business case. (For more details, see https://www.latrobe.vic.gov.au/news-and-media/Latrobe_Welcomes_Investment_in_Energy_from_Waste_Facility)

SLA encourages Council to further investigate this option at its landfill management site and sewage treatment plants. There is an opportunity for ARC to be at the forefront of development of this emerging technology if it is shown to have significant benefits in the context of ARC facilities. The scale of the project could be determined by the amount of methane already being produced at the Sewage treatment works or waste management facility. Aside from emissions reduction benefits advantages of this technology include the potential for utilisation of existing waste streams and the availability of the energy produced at a time when solar is not being produced. There may be the potential for carbon offsets in relation to this option.

Section 6.0

Working with large scale renewable energy developers / PPAs / need to finalise Community Engagement and Benefit Sharing Policy

Options for working with large scale renewable energy developers in the area include co-ownership of projects and direct Power Purchase Agreement (PPA) with selected wind and/or solar farms. If Council pursues this option it needs to develop criteria to help it to evaluate potential projects and ensure that the renewable energy producer that they negotiate co-ownership with or purchase their power from has done its business well and demonstrated good community engagement, local procurement and benefit sharing as well as effective power generation. A framework is needed to provide guidance for developers as to what Council expects from developers with regard to community engagement, local procurement and benefit sharing to be done by corporate developers in the region.

To support this option and to underpin its negotiations with Renewable Energy developers it is important that Council follows through with its excellent initiative to develop a Community Engagement and Benefit Sharing for Renewable Energy Projects Policy. On 25 November 2021 SLA, during the public exhibition period for the document, SLA wrote to Council commending its preparation of the draft policy and strongly supporting co-ordination and strategic guidance by Armidale Regional Council about renewable energy development and associated benefit sharing

strategies. SLA encourages Council to finalise this document after adjusting to accommodate changes that may have taken place in the intervening period.

If Council chooses to enter into a PPA with a large-scale energy user it would be really great if they found ways to do that with other large scale energy users and businesses in the local community. See https://www.melbourne.vic.gov.au/sitecollectiondocuments/mrep-guide-01-corporate-power-purchasing-agreements.pdf for an example of this approach. Through the Melbourne Power Partnership, Melbourne City Council has partnered with Latrobe university and Melbourne Zoo and several others. They have aggregated their energy demands and then negotiated a direct Power Purchase Agreement with a wind farm in Victoria. Council could approach institutions and businesses such as University of New England to further investigate this option.

If Council chooses to follow the path of joining with other Councils to negotiate a Power Purchase Agreement, it will benefit the community if consideration of energy producers is weighted towards those that will feed back into the economic base of the local communities.

Trailing a range of energy storage technologies

The aspect of leadership through trailing a range of energy storage technologies and sharing knowledge gained with the community looks like a good idea, particularly if evaluation of the most environmentally sustainable options are factored into a pre-trial assessment. Assessment of the environmental sustainability for pumped hydro projects and construction of pipelines is of particular importance, particularly where construction of the project and associated transmission lines and roads involves damage to and fragmentation of otherwise intact bushland.

Additional points

- **Support of low-income earners and Indigenous persons in the energy transition**

It would be appropriate to include in the REAP options for Council to support service provision to ensure inclusiveness and support the vulnerable members of our community. Indigenous people, disadvantaged persons and/or low-income earners within the community are likely to be adversely affected in the transition to renewable energy, particularly in the context of electricity price instability and rises. This could include options to support transition from wood heating to heating from electric appliances.

Transition to electric appliances can be expensive and it can be difficult for people to engage with cost effective operation of devices, particularly where houses are energy inefficient in design and poorly insulated - a frequent problem in cheaper rental houses. Council could include in its REAP support for conversion to electrically based energy for houses, particularly for low-income earners. Further engagement of community and Indigenous organisations supporting these groups - and their housing and electricity options - would be warranted.

- **Suggestions for minor edits to improve the document**
  - On p 7 the words *alignment of this Plan with the UN* should be followed by either *UN Sustainable Development Goals* or *UN Global Goals* rather than *UN Development Global Goals*.
  - On p 8, third line, replace *mitigation for* with *mitigation of.*
  - On page 12 and in index, Contract Site Analysis should be numbered as 2.0 instead of 1.0
  - Where the popular phrase *'no brainer'* is used in the document (eg p 18), substitute more accurate terminology such as *'obvious'* or *'most obvious or most advantageous option'* (p 25). We should be engaging our brains in all aspects of decision making!
  - On p 15, second line, remove the second repeated word energy to read *'energy can be purchased'*

- Page 17, line 2, ‘per year’, not ‘pear year’).

The draft REAP document is very comprehensive, hence this submission only provides detailed comment on some aspects of the document, with the result that other important items may have been overlooked. We look forward to ongoing collaboration with Council in this regard.

Overall, Council is to be congratulated on preparation of an excellent document to assist with decision making as Council acts to take advantage of opportunities provided as part of the essential transition to renewable energy sources.

SLA thanks Council for inviting public comment on the draft Renewable Energy Action Plan and strongly endorses adoption of the plan by Council.

Yours Sincerely

Helen Webb	Annette Kilarr	Dr Sanaz Alian
Convenor, Sustainable Living Armidale	Convenor Climate Action Group Sustainable Living Armidale	Facilitator Renewable Energy Working Group Sustainable Living Armidale

Sustainable Living Armidale acknowledges the Traditional Custodians of the land on which we live and meet. We pay respect to their elders past, present and future.

23rd September 2022

Mr James Roncon
General Manager
Armidale Regional Council
Emailed: council@armidale.nsw.gov.au

Dear Mr Roncon,

Submission to ARC Renewable Energy Action Plan

OneWiFi & Infrastructure (OneWiFi) strongly supports the objectives of the Armidale Regional Council (ARC) Renewable Energy Action Plan, especially to play its part in mitigation for, and adaptation to, climate change, and to increase use and innovation of renewable resources and decrease the use of non-renewable resources.

We are writing to ARC to provide some observations and comments on some of the recommendations put forward in the action plan.

Smart Street Lighting as a Business and Usual (BAU) Priority
Street Lighting has been identified as a major source of energy consumption in the report. It is noted that ARC is already replacing the inefficient halogen with LEDs. ARC should consider the accelerated LED replacement program to be complemented by Smart Lighting to allow for 'dimming and trimming' to further reduce energy consumption, and make greater use of onsite renewable energy to power some of the lighting requirements.

Pilot of Electric Vehicles and EV Charging
Starting small with EV is a sensible approach given the business case for EV may be marginal if taking into account the CAPEX required for establishing EV chargers across Council facilities. DC Fast Chargers are highly cost inhibitive and require significant augmentation to the existing electrical infrastructure. Alternatively, ARC may wish to consider less expensive options such as a mix of 22kW AC Fast Chargers (for daytime fast charging) and 7kW AC Chargers (for overnight slow charging).

Analysis Inconsistent with the Recommendation for Small Wind Turbine
The analysis produced in the report (Table 14 on Page 45) do not support the recommendation for the consideration of Small Wind Turbine. On the contrary, the analysis actually demonstrates the cost inefficiency of Small Wind Turbine.

Of the cost of $11.57 per day to produce the equivalent kWh/yr of the 'new amenity' powered by the grid, the Small Wind system costs $6.67 per day to produce a mere 766.5 kW/yr, with the Solar system producing 4,674 kWh/yr at $1.69 per day, and $3.21 per day for the Battery system. It does not make sense to recommend Small Wind Turbine when it produces very little energy at very high cost. By removing the consideration of Small Wind Turbine, the onsite renewable business case is highly favourable for Solar and Battery only at less than $5 per day to produce the equivalent energy to an on-grid connection at $12.40.

Table 14. Armidale Regional Council Off grid public amenity concept

New amenity	Load	kWh/yr*	kWh/d*
1	New amenity	4168	11.4
	Annual cost	$1,436.00	
	Cost per day	$3.93	
Grid connection			
1	Grid installation CapEx	$30,000.00	
	reduced to daily rate at	10	year Payback
	=	$8.47	per day to finance
	Total cost	**$12.40**	per day
*Usage figures modelled off Mckie Parkway Recreation Area			
smallWind	System size	220	W
1	Daily output	2.1	kWh
	Annual output	766.5	kWh /yr
	Annual cost	$2,433.33	
	Cost per unit per day (installed)	$6.67	
Solar	System size	3	kW
	Daily output	12.8	kWh
	Annual ouput	4,674	kWh / yr
1	Per W installed	$1.35	
	CapEx	$6,000.00	
	=	$1.69	per day (10 years)
Battery	System size	13.5	5kW/13.5kWh
1	Installation cost	$11,700	
	reduced to daily rate at	10	year Payback
	=	$3.21	per day to finance
	Total cost	**$11.57**	per day
	Carbon Offset	3.37608	tonnes p.a.
*Emission factor 2021 (NSW)			

OneWiFi strongly supports the use of wind and solar hybrid systems to cater for the disadvantages of solar only systems. It can sufficiently power small scale lighting and operational asset consumption. However, ARC should revisit this analysis and recommendation made in the action plan which endorse the Small Scale Wind Turbine.

We would welcome the opportunity with ARC further to explore renewable generation and energy savings opportunities.

Yours faithfully,

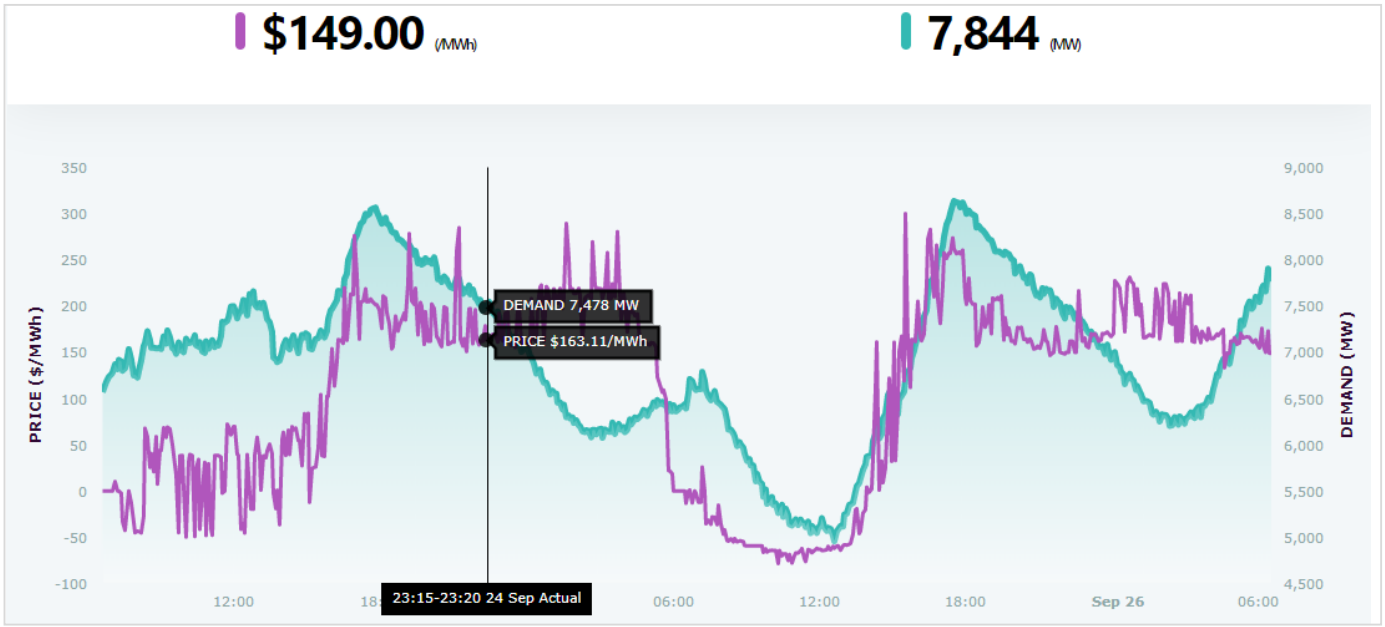
Gary Tsang
Commercial and Strategy Director
ONEWIFI & INFRASTRUCTURE

Submission: draft Renewable Energy Policy
New England Greens Armidale Tamworth (NEGAT)

ARC should aim to maximise climate and financial benefits

Much has changed in the few months since June 2022, when ARC received Constructive Energy's final report. For example, ARC has negotiated a small sites contract that supplies electricity at 5.57 cents per kWh (6.96 peak and shoulder, 4.16 off-peak; for sites with smart meters), with 100% renewable energy costing just 0.84 cents/kWh more in 2025. These tariffs are a fair bit lower than the 8 cents/kWh for which Constructive Energy suggested council could sell power to itself, or other local consumers, if ARC invested in a medium scale solar array (see page 25 of the report). Constructive Energy's modelling therefore seems rather optimistic. ARC should proceed with caution.

Another reason for caution is that, even in today's electricity market, sunny days often have negative power prices. On 25 September 2022, for example, the wholesale price was below zero from 7 am until about 3 pm. The graph below shows the wider picture in NSW, 24-26 September 2022, including troughs in demand when rooftop solar was operating. In fact, price is almost decoupled from demand, with high prices overnight when there was little wind generation and coal-fired power dominated. This suggests that a mid-size solar array in the New England (NE) REZ will be a price-taker and unable to benefit from higher overnight prices.



Another reason for caution is that the NSW Government received about 4 times as many expressions of interest as the available 8 GW of transmission capacity planned for the NE REZ. More importantly, developers are likely to aim for maximum benefits from their transmission allocation, so will probably oversize generation. One estimate is that 16 GW of generation will be installed to maximise the 8 GW of transmission.

For the NE REZ, if substantially more than 8 GW of generation is installed, there will be many days when generation exceeds the capacity of the transmission link. Surplus solar and wind generation will have to be turned off unless the surpluses can be stored or used locally. Current storage proposals (Oven Mountain, some batteries, and options for pumped hydro near Walcha) might not be enough to use up the surplus in the near term.

More importantly, **there would be zero climate benefit** of ARC installing additional generation capacity, if the result is that other renewable generation has to be turned off because the transmission link is maxed out, or to avoid having to pay to export power to the grid.

Consequently, investing a similar amount in energy efficiency, and encouraging the NSW and Federal governments to subsidise energy efficiency improvements (such as the Victorian Government's subsidies

to replace wood, gas and radiant electric heaters with reverse cycle) would generate greater climate benefits for available resources.

Negotiate renewable power-sharing deals for the entire community with developers and distributers

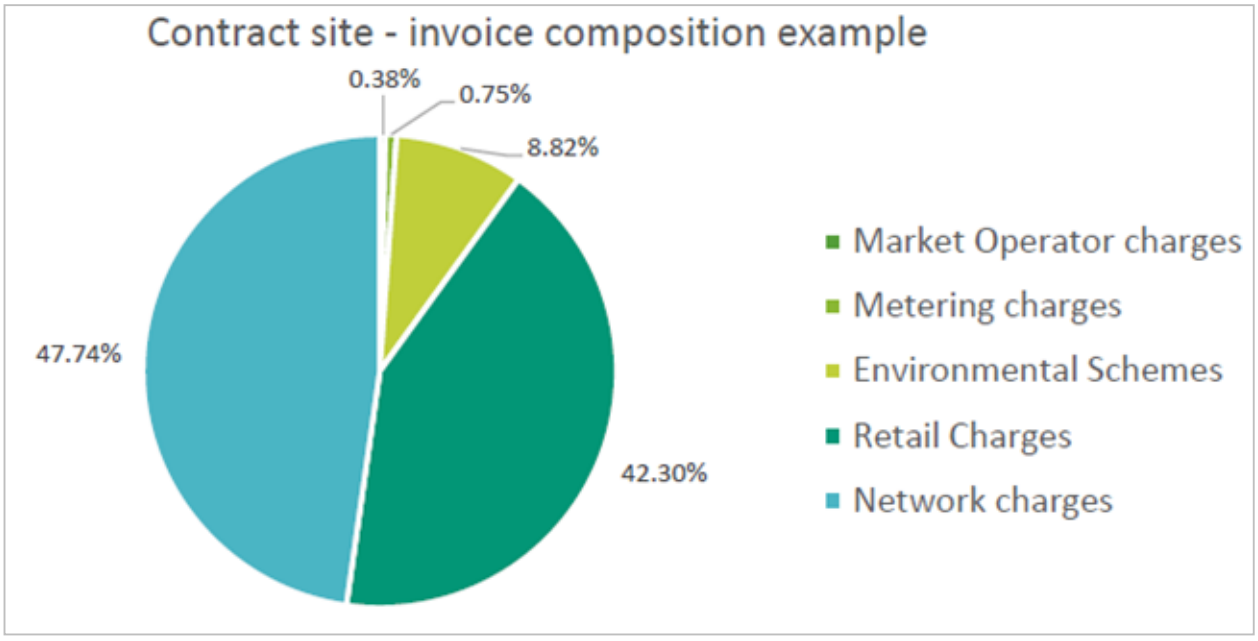
ARC demonstrated superb negotiating skills in the voluntary planning agreement with the Oxley Solar Farm. Applying those skills to other prospective developments could generate tremendous benefits for the entire community, representing the best way to reduce the Region's contribution to global warming.

Guaranteed low-cost power would, for example, encourage more people to switch from buying firewood using radiant electric heating or unhealthy unflued gas heating to clean, renewable heating, and also consider electric vehicles. Possibilities suggested in the Constructive Energy Report include peer-peer trading with Virtual Net metering, which would require all participants to use the same retailer. This might be facilitated if CWP Renewables is taken over by a major gentailer.

Another possible way to reduce dependence on coal-fired power and soak up surplus daytime power would be to work with Essential Energy (the government-owned distributor) and retailers to encourage a switch to daytime water heating. Many houses have controlled-load systems that were set up to take advantage of formerly cheap overnight coal-fired power. Changing the switching mechanism to allow use of surplus low-cost renewable daytime power might represent a highly effective mechanism to reduce dependence on coal-fired power and also speed up the transition to 100% renewable. For off-peak meters with ripple-control signals, it might be possible to use the same meters and household wiring, if energy retailers supported the change, suggesting this improvement might be effected at minimal cost.

Switching to daytime water heating might also improve the financial prospects of ARC investing in a mid-size solar array, noting that one gentailer currently offers very cheap prices for controlled load 2 (6.3 c/kWh including network charges) in the New England area, presumably because most of the power consumption on this tariff coincides with peak solar generation.

Electricity charges, ARC Civic Administration Centre, May 2021 (p 14, Constructive Energy Report)



Negotiate the best possible network charges

Constructive Energy's report's shows that ARC pays more in network charges (48%) than power (42%), suggesting that ARC should investigate the potential for working with developers, distributors and the community to provide the best deal for locally-produced renewable energy. The 'gold-plated' grid came about because of counter-productive regulations that allowed distributors to recover the entire cost of meeting peak demand that might happen only a few hours a year, instead of the much cheaper option of investing in demand management.

As well as demand management, options include strategically-placed batteries to reduce bottlenecks in the network, and innovative network tariffs. To take advantage of surplus solar generation, in July 2020, South Australia Power Networks introduced a '*solar sponge*' tariff, a quarter of the price of the normal network tariff, from 10 am to 3 pm. Essential Energy is currently considering a similar innovation.

Summary

ARC should work with developers, energy retailers and the government-owned distribution network, Essential Energy, to find the best possible renewable energy deals and tariff structures for the entire community.

- ARC should commit to 100% green power by 2025, when the cost will be less than 1 cent/kWh
- ARC should consider the benefits of electric vehicles, and also lobby for the provision of adequate electric vehicle charging stations
- ARC should continue to negotiate with developers in the REZ to provide community benefit-sharing schemes, and with developers, energy retailers and Essential Energy to implement schemes for low-cost electricity for households in the region
- ARC should also work with local experts to provide advice on energy efficiency and upgrading gas, wood and radiant electricity heating to efficient, climate-friendly reverse cycle systems
- ARC should lobby EnergyCo (which aims to distribute community benefits from the REZ) as well as the NSW and Federal governments to provide advice on energy efficiency and subsidise energy efficiency improvements (such as the Victorian Government's subsidies to replace wood, gas and radiant electric heaters with reverse cycle) because of the substantial benefits, including climate benefits, for our region
- As recommended in the Constructive Energy Report, ARC should consider the costs and benefits of distributed storage to complement its behind-the-meter solar.
- All the above are aimed at creating a council and community that is more 'energy aware', with increased energy efficiency, reliability and cost reduction.

I would like to commend Armidale Regional Council on taking their commitment to the 2019 declared Climate Emergency seriously by getting a Renewable Energy Action Plan developed as evidenced by this quote on p11.
"This report examines opportunities for Council to become investors and long-term financial beneficiaries of energy infrastructure in the process of becoming 100% renewable."

It seems as though there are many ways of ARC reducing energy usage, increasing energy generation, and even becoming a generator and retailer of energy into the future, particularly through the installation of a mid-size solar plant.

As a rate-payer, my main concern is how the REAP developments would be funded, though there is hope that there will be some State and perhaps Federal government funding to assist. As we are already facing an unprecedented land rate fee increase over the next few years to cover existing infrastructure maintenance, I would want assurance that there would be no further rate rises imposed to fund the Renewable Energy Action Plan over at least the next 10 years.

Warmly,
Joy Bowles
[redacted]

General Manager,

Armidale Regional Council.

Submission re: Renewable Energy Action Plan

I support Council's endorsement of the ARC Renewable Energy Action Plan (REAP), I support the proposed roadmap and I support engagement towards the following outcomes:

- A strong commitment from my local council to adapt to the energy transition and act on climate change
- A council that shows leadership by engaging in its own energy transition while incorporating an enabling role for the community
- Council renewable energy projects structured so that community power projects and household opportunities are embedded where possible
- Carbon reduction and the goals of Project Zero30
- A council and community that is more 'energy aware', with increased energy efficiency, reliability and cost reduction
- Real community benefit, benefit sharing and partnership engagement with the REZ opportunities.
- Greater use of and support for electric vehicles
- Local job opportunities
- Lower energy bills overall

i would like to add that air quality in Armidale in the winter needs to be improved. Because some householders still burn wood to heat their homes the associated pollution should be a thing of the past. Burning wood to provide warmth is short sighted and environmentally 'dirty'.

Elizabeth Ellis
[redacted]

The General Manager, Armidale Regional Council.
council@armidale.nsw.gov.au

Re: **Renewable Energy Action Plan**

Dear Mr Roncon

We wish to let Council know through you that we strongly support Council's endorsement of the draft Renewable Energy Action Plan (REAP) and look forward to it being finalised. We also support the proposed roadmap because this moves vital action on climate change. As Council has acknowledged, we are in a climate emergency.

We are very pleased by Council's strong commitment to undertake energy transition and that it is leading the way and enabling other actions in the wider community.

We applaud moves for carbon reduction and support the goals of Project Zero30; we also support renewable energy projects structured so that community power projects and household opportunities are embedded where possible. The aim to create a council and community that is more 'energy aware', with increased energy efficiency, reliability and cost reduction is absolutely essential. We look forward to real community benefits, benefit sharing and partnership engagement with the opportunities created by the REZ.

We wholeheartedly agree with the greater use of, and support for, electric vehicles: we have a plug-in EV ourselves and it makes a difference to our costs as well as being able to fuel up from our rooftop solar PV.

We strongly urge Council to maintain its momentum and to take further initiatives in relation to the climate emergency. We'll keenly support it in doing so.

With best wishes

Dr James Vicars
[redacted]

Ms Angela Earth
[redacted]

[redacted]

Jeannet van der Lee
[redacted]

General Manager
Armidale Regional Council
Armidale NSW 2350
via email to council@armidale.nsw.gov.au

26 September 2022

Submission RE ARC Renewable Energy Action Plan

To the General Manager,

I am writing to show my support for the ARC Renewable Energy Action Plan (REAP), and its intention to provide leadership to anticipate and adapt to the effects of climate change through the deployment in this case of renewable energy solutions.

Achieving net zero for all Council operations by 2030 appears to be entirely achievable, and I encourage Council to commence as soon as possible. In doing so, it will be important that Council clearly and loudly communicate the objectives, implementation and outcomes of its renewable energy projects to inspire the ARC community and the region as well as other councils and communities to work toward adoption of emissions reductions technologies.

I support the commitment from Council to examine all facets of its operations and to achieve net zero emissions by 2030, not only through participation in the REZ but through direct ownership / management of renewable energy technology rather than solely relying on energy suppliers. I also support the notion that energy efficiency measures such as those listed at 4.1 be explored to reduce the overall energy supply need. One aspect not considered by the REAP is the emissions generated by Council employees travelling by air and where emissions could be reduced here.

Regarding the decision making framework outlined at 1.4, I believe that the environmental impact should also be considered when evaluating the various projects, for example solar, wind and hydro projects will have some environmental considerations. It would also be interesting to know what if any Council's relative weighting for each of the factors may be when determining the rankings?

In summary I support engagement towards the following outcomes:

- A strong commitment from my local council to adapt to the energy transition and act on climate change.
- A council that shows leadership by engaging in its own energy transition while incorporating an enabling role for the community.
- Council renewable energy projects structured so that community power projects and household opportunities are embedded where possible.
- Carbon reduction and the goals of Project Zero30.
- A council and community that is more 'energy aware', with increased energy efficiency, reliability and cost reduction.

- Real community benefit, benefit sharing and partnership engagement with the REZ opportunities.
- Greater use of and support for electric vehicles and the use of renewable fuel sources in the interim for larger machinery.
- Local job opportunities.
- Lower energy bills overall.

Many thanks for the opportunity to make a submission to the Action Plan.

Best wishes
Jeannet

Submission Re Armidale Regional Council Renewable Energy Action Plan

I have been interested in alternative forms of energy generation for two decades. From 2007 to 2020, I was convenor of the SLA energy subgroup. Among many things, our subgroup was behind encouraging Council to establish a climate emergency. It is wonderful to see Council finally adopting strategies to reach Zero30 and beyond. I trust that the goals outlined in this report are a central focus in a push to raise rates and put ARC on a sound financial basis. I believe responses to climate change should be in the centre of policy development, both mitigation and adaptation.

I have looked through the plan submitted by Constructive Energy and appreciate the breath of council's commitment to a just transition to renewable Energy, to lowering emissions and reaching Zero30. I lend my support.

While the background information in the report is essential, my comments will focus on the Roadmap outlined on pages 52-56, and the importance of proper evaluation p57.

The framework for evaluating projects seems excellent. I trust it will be applied to all projects. I commend the recommendations and inclusion of the proposed action, although on some recommendations adequate action is scant.

#1 : Mid-scale generation: I particularly support the possibility of a Council owned mid-scale energy generator to supply ARC needs. The final section on a potential Midscale solar farm/power station adds depth to the proposal. The chart, pg 61, with steps and possible budget is valuable in allowing the community to monitor progress. Do the actions associated have time commitments?

If a solar plant is located near the Sewerage Treatment plant, not only could it provide the energy needed currently to run ARC facilities, in future it might power water recycling.

#5 Storage: it now seems appropriate to integrate generation with storage in any mid-scale energy project. A good idea, see #7 modelling storage systems with scale. And definitely don't sign long term energy supply contracts.

#6: Integrated systems: the possibility of an integrated system that includes businesses provides community benefit for the money spent. I support council facilitating, or collaborating to create a local energy retailer and ultimately a local grid See #16?

#9: EV: important to parallel purchase of EV with expanding charging stations.

#12: Pumped Hydro: I, too am hesitant about pumped hydro largely because of the probability of severe environmental damage during construction and the potential

negative impacts of drought on generation. Most of the sites identified are in beautiful bushland, without obvious appropriate locations to generate the needed electricity.

#14: Discrete versus community projects: why not both? There is room to include community/individual investment in projects, as well as Council. As noted, they could be separate projects or combined.

15: Alternative bio-energy etc: Obviously these technologies need to be considered as they become feasible options.

#17 Energy Security: I'm not sure how the Action matches the Recommendation. It does, though, relate to creating a business case for proceeding.

MONITORING: #1 without it, it is impossible to be able to report on progress and hence be transparent re: the value of the expenditure of public money and the goal to lower emissions.

#3 Procurement should probably be in the above Action plan. A strong preference for local and environmentally sound procurement is critical, in my mind, to strengthening our region and lowering our footprint.

#4 & #6 Building Retrofits: are there strategies that Council can employ that will help residents and builders understand and implement minimal energy use in new housing and in renovations? The value of passive solar design, the significance of adequate insulation and double glazing, the value of eaves on the north side, the importance of light-coloured roofs, the cost of embedded energy etc. should be part of both education and planning approval—if only to query decisions that do not incorporate ways to keep energy consumption minimal. At present, BASIX remains inadequate.

As well, we should move toward prohibiting wood fires in new homes, and to find ways to encourage switching from wood fires to reverse cycle heating in older homes. The air outside out house by midnight in the winter smells as smoky as it did during the bush fires.

#5 Education: could information and tracking of progress go in a newsletter circulated with all rates? There could also be tips for households.

Finally, it is useful for residents to have the material in the appendix about Council facilities.

Thanks for all the work done to create these goals and to allow residents to comment.

Patsy Asch
[redacted]

To the General Manager of Armidale Regional Council

From Robert (Bob) Samuel Baker

Bachelor of Natural Resources with first class Honours for thesis titled:

“Developing an integrated renewable energy, water supply and carbon management system in Australia as an alternative to fossil fuelled systems” (2009)

And currently trying to complete an overdue aggressively unwanted “PhD Innovation” thesis with the last working title:

“Monitoring and Manipulating Freshwater Microalgae Communities to facilitate “Ecologically Responsible Geoengineering” and address major causes of Anthropogenic Climate Change”

Which I have been innovating to:

“An inverse School Strike to provide the understanding, tools and methods required to effectively address Anthropogenic Climate Change (ACC)”.

Thank you for your proactive stance on addressing one component of complex climate change. I would like to offer my services as a truly independent consultant to your efforts to address ACC but have become a pariah for my Greta Thunberg like awareness and courageous care. If you find the 1965 report “Restoring the Quality of our Environment” which was presented to LBJ and the US congress before I was 6 months old and look at the crystal clear warning about the enhanced greenhouse effect caused by fossil fuel use and contemplate that mainstream discussion and actions are at the level they should have been when I was five years old – infantile – then you might understand my anger which is possibly even greater than Greta Thunberg’s given that I have spent at least 60,000 of ASD intense (diagnosed this year) study and have been effectively screaming into a void of self-interested one trick wonders of all shapes and sizes since 2005.

So it is great that the council has began a comprehensive process to address the electricity supply component of destructive ACC but I might add some observations on how the technology should be installed to avoid gratuitous damage to the wider climate system, damages such as vegetation, soil and water destruction – “Ecohydrological” which could outweigh any benefits of large scale, potential rural heat island, white elephant “Pink Batts” circus where good ideas are ruined by myopic gold rushing cowboys clustering towards a badly managed pork barrel. And I will add some observations on the crucial importance of our struggling biodiversity to our climate system and some suggestions on how potential impacts to that might be avoided or even be turned into positive impacts.

Thank you for requesting submissions, hopefully help optimise the systems you propose not just for the provision of increased renewable power generation, energy storage, efficiencies etc, but also the invitation to look at wider issues and the whole suite of technologies, note that hydrogen has an indirect global warming potential about 11 times greater than CO2 though so it would be great to see some care around that “silver bullet” there are no silver bullets unfortunately, we must use every resource we have intelligently and with consideration to dynamic context if we are to avoid extinction before 2100.

I monitored your sewage ponds for over a year as well as Walcha and Guyra's wastewater oxidation ponds as part of my "PhD Innovation" that I tried to skull drag my poor University along with as our university system was being dismantled by the LNP, Labour twiddled its thumbs and my university was being dismantled by corrupt hacks that all ARC citizens should be familiar with.

But I am sure that this council will finally rise above desirability biased corrupt self interest and forget such insane rent seeking sops to "developers" such as importing another 10,000 thirsty wanters into a town that is going to run out of water within a decade, possibly more than once. Unfortunately, our Earth is already overpopulated as is Australia and the new England region, there are already enough people here to turn the place into a desert if people do not learn to respect our Earth.

It is also that becoming a homeless pariah for my efforts for our Earth has left me somewhat logistically challenged and I have only had time to scan your plan, so hopefully you will seek submissions on components of your plan as you develop it.

Before specifically addressing your plan I am serious about offering myself as a truly independent expert consultant – I must seek suitable employment to maintain my poverty allowance but am opposed to destructive employment, trying to preserve our biosphere is my moral imperative and I have been working in poverty since 2005 while parasites thrive.

And I would also like to work with council to develop my "Ecologically Responsible Geoengineering" system/s, or at least some major components of it such as the multistage Plankton ecosystem management and harvesting tool I spent 4 years building despite my wife dumping PhD supervisor and dysfunctional UNE – and I will of course try to drag them on board, maybe the dead wood will retire soon, I live in hope.

I can send you the chapter I submitted on the results of testing the pilot scale plant using the water I collected from the final pond of Armidale sewage treatment works, chapter five – I have submitted 3 chapters on the sewage monitoring and manipulation component, Mike Evans called me a "Giant" for my chapter 5 – worth a PhD alone in fact, but none of them speak to me now, hopefully that will change soon, if they showed me a modicum of respect I would not have been so harsh on the ignorant Dunning Kruger's, not to worry.

In any case my "filter" is designed to optimise microalgae ecosystem community functions: - resilience, productivity, Nutrient and CO_2 interception for subsequent addition to soils to enhance fertility and ecohydrological functions – and to be harvested for biofuels – biodiesel – I am sure you would appreciate that before the fleet is fully electrified – it also offers the potential of removing more nutrients in useful form than the current wild plankton ecosystem – I found 108 species of microalgae in total, details, hard to summarise 250,000 words but am still working on that.

In any case I have unique patentable technology in an apparently initiative impoverished country that can address ACC in many integrated ways – clean up the wastewater, usefully disperse the phosphate building up beneath your proposed solar farm at the wastewater plant and provide a useful stream of income and employment as I would like to construct a factory to produce shipping container bespoke units of my technology for various tasks ranging from advanced wastewater treatment to removal of harmful and toxic algal blooms from reservoirs and rivers while working to address the causes of such travesties.

If you would like to chat about that and I hope you do because I am probably among the worlds leading authorities on addressing climate change and I will conclude that ARC is yet again dominated by those who hold self interest and their fantastic egos above all else including humanity and our biosphere that humanity needs. A challenge, I would like to enter serious discussions and if you are serious about addressing climate change rather than ticking convenient boxes you will wish to speak with me and I shall try to be nice, I have been studying “normal” humans this last 18 months and must try out my diplomacy on someone.

David Bell knows who I am as do many of your council staff, please speak to him but note my project is complicated and Dave only knows about a part of it, you will have my email when I send this but I shall not leave my contact details here.

Time is short. I will just make some general observations that I can fully back up with enough info to make ones eyes glaze on request, but just some notes.

The rural heat island effect should be considered, dense solar panel installations close to the ground will create an ecohydrological desert. Panels should be spaced and raised to retain the landscapes natural multifunctionality, soil and vegetation must be preserved as a priority, put the panels over car parks and already hot surfaces and do not clear trees as a priority – they are worth more to our climate system in direct mitigation and ecosystem terms than multiple times their area of poorly placed solar panels or windfarms and associated infrastructure, I will send you the explanation for that when I finish editing it, we have damaged Australia’s climate by destroying its vegetation and soils profoundly and must restore those systems or perish.

Likewise clearing feral animal tracks with powerlines gouging through remnant vegetation – potentially more harm than good, the devils are in the details.

The impacts of colonialisation destroyed ~600 cubic km of topsoil which would have stored at least 240 cubic km of water at field capacity, and we have destroyed most of our vegetation as well using the 12,000 year old traditional methods of desertification fortified by bulldozers, chainsaws and lashings of bs. Not good enough but I am sure that this council is lifting its game and I hope you will allow me to assist you to lift it much higher so that we do not all starve and or burn to death in the next few years, mewling noises of ineffectual concern are not “care” care is a verb and I am tired of acting alone and approaching idiots. I welcome any questions and would be pleased to be employed as a consultant to supercharge your great efforts. I am described on page 39 of “restoring the Quality of Our Environment” and will be pleased to send you a copy of that if it is hard to find online and can send the other 800 odd papers in my latest “thesis” on request or draw from them and more if employed as a remote working asset for our ARC! Cheers.

Apologies I am pushed for time, living in poverty poses extreme logistical difficulties and is wasting an asset of our Earth which is typical of this flat Earth terminal civilisation that must wake up and reform Now.

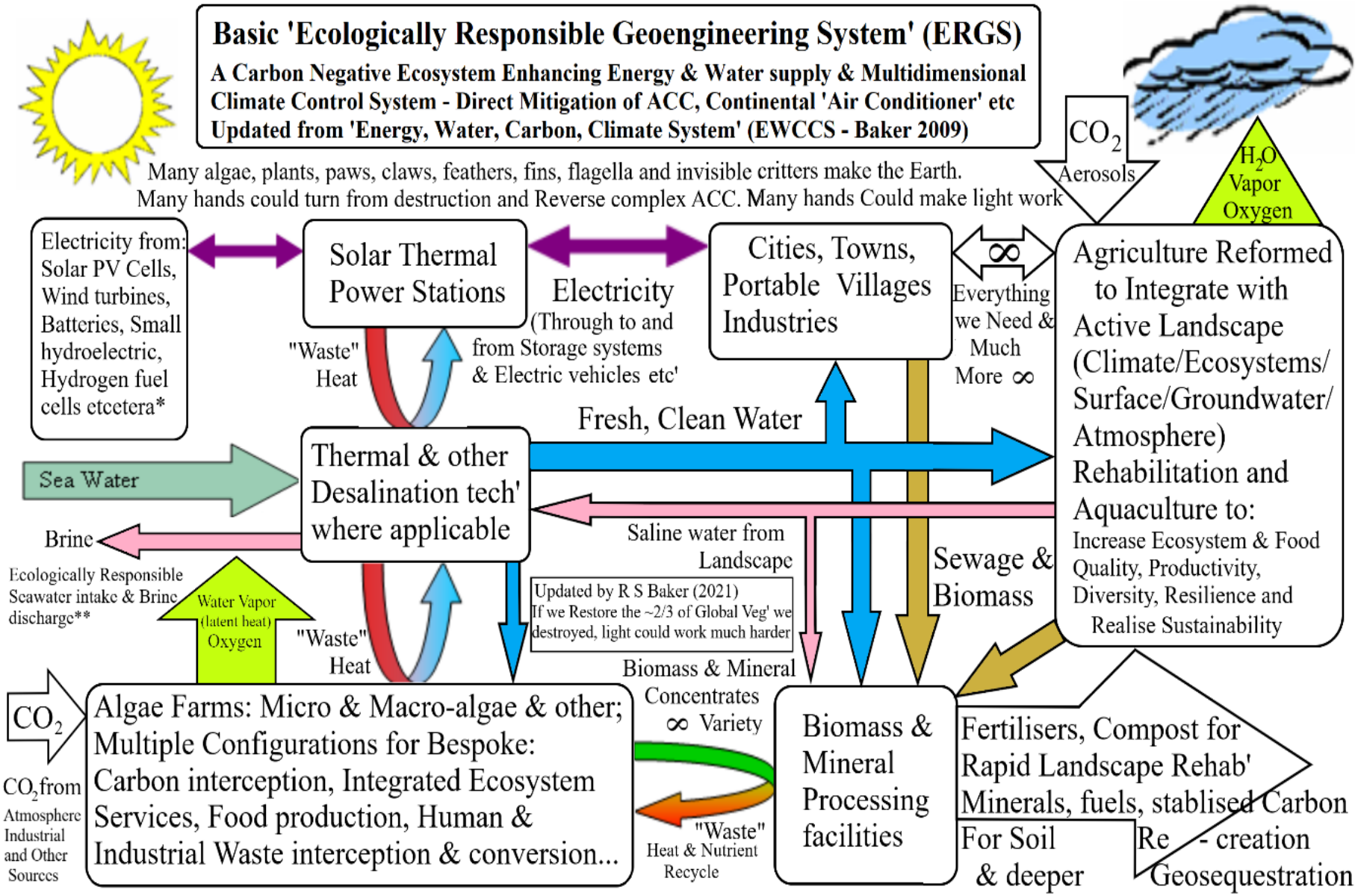
Cheers, the following diagram is a generic outline of the bulk of my system – but the devils are in details only one in a thousand people or less understand, anyway, working on overcoming my “imposter syndrome” and dealing with fragile egos and I look forward to hearing from you and working with you.

Note, deep cycle easily recyclable lead acid batteries are fine as far as stationary energy storage goes, I will send you a copy of my honours thesis etc if you can muster the initiave and provisional respect and humility required to request them and I shall extend the same provisional respect to you and your institution even though I have been very disappointed by my contemporaries utter lack of respect and care for our Earth.

But I am sure that this time people will rise above convenient self interest, I look forward to seeing that and your report looks great, apologies I have not had time to fully read it I have far bigger fish to fry recently but working with council and UNE if they dump the current council will facilitate that.

Cheers

Sincerely, Bob Baker


Basic 'Ecologically Responsible Geoengineering System' (ERGS)
A Carbon Negative Ecosystem Enhancing Energy & Water supply & Multidimensional Climate Control System - Direct Mitigation of ACC, Continental 'Air Conditioner' etc
Updated from 'Energy, Water, Carbon, Climate System' (EWCCS - Baker 2009)
Many algae, plants, paws, claws, feathers, fins, flagella and invisible critters make the Earth.
Many hands could turn from destruction and Reverse complex ACC. Many hands Could make light work
CO2 Aerosols
H2O Vapor Oxygen
Electricity from: Solar PV Cells, Wind turbines, Batteries, Small hydroelectric, Hydrogen fuel cells etcetera*
Solar Thermal Power Stations
"Waste" Heat
Electricity (Through to and from Storage systems & Electric vehicles etc'
Cities, Towns, Portable Villages Industries
∞
Everything we Need & Much More ∞
Agriculture Reformed to Integrate with Active Landscape (Climate/Ecosystems/ Surface/Groundwater/ Atmosphere) Rehabilitation and Aquaculture to:
Increase Ecosystem & Food Quality, Productivity, Diversity, Resilience and Realise Sustainability
Fresh, Clean Water
Sea Water
Thermal & other Desalination tech' where applicable
Brine
Ecologically Responsible Seawater intake & Brine discharge**
Water Vapor (latent heat) Oxygen
"Waste" Heat
Saline water from Landscape
Updated by R S Baker (2021)
If we Restore the ~2/3 of Global Veg' we destroyed, light could work much harder
Sewage & Biomass
Biomass & Mineral Concentrates
∞ Variety
CO2
CO2 from Atmosphere Industrial and Other Sources
Algae Farms: Micro & Macro-algae & other; Multiple Configurations for Bespoke: Carbon interception, Integrated Ecosystem Services, Food production, Human & Industrial Waste interception & conversion...
"Waste" Heat & Nutrient Recycle
Biomass & Mineral Processing facilities
Fertilisers, Compost for Rapid Landscape Rehab'
Minerals, fuels, stablised Carbon
For Soil & deeper
Re - creation Geosequestration